

REMARKS

The Applicants have reviewed the Office Action mailed July 8, 2004. Claims 1, 4 to 12, 15 to 23, 26 to 34, 36, 38 to 54, 56, 58 to 74, 76, and 78 to 100 are pending in the application, with Claims 1, 11, 12, 22, 23, 33, 34, 54, 74, and 94 being independent claims. Claims 2, 3, 13, 14, 24, 25, 35, 37, 55, 57, 75, and 77 have been cancelled without prejudice or disclaimer of the subject matter contained therein.

Reconsideration and further examination are respectfully requested.

Applicants have carefully reviewed the Examiner's remarks and the applied references and respectfully submit that the claims as amended are now patentably distinguishable over the applied references for at least the following reasons.

5. Claims 1-7, 12-18, and 23-29 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,963,208 (Dolan et al.).

Independent Claim 1 has been amended. Support for the amendment is found in Claims 2 and 3, the features of which are now recited in the amended form of Claim 1. Claims 2 and 3 have been cancelled.

Claim 1 is directed to providing and displaying a first point and a second point on respective first and second axes to enable navigation of a multidimensional space containing an electronic publication formed from predefined portions of text-based data. The Applicants submit that the term "*multidimensional space*" would be readily understood by a person skilled in the art to describe a space defined by a plurality of intersecting axes. Claim 1 has been amended to recite that the multidimensional space has three or more dimensions, as supported at page 10, lines 5-6 of International Publication No. WO 98/34179 (PCT/AU98/00050), which is incorporated into this application by cross-reference.

The multidimensional space of claim 1 is defined by axes corresponding to logical connections among predefined portions of an electronic publication, and any logical connections that may exist between the predefined portions of the electronic publication and predefined portions of any further electronic publication data in the multidimensional space, as supported by page 1 at lines 11 to 22, and page 8, line 15 to page 9, line 2. Further support is found at page 9, lines 9-26 of International Publication No. WO

98/34179 (PCT/AU98/00050), which is incorporated into this application by cross-reference. Page 12 of the description of this application describes a multidimensional space containing an electronic publication that may be navigated in respect of a number of viewing axes. The axes are orthogonal to one another, as described in the specification at page 12, lines 16-17. The electronic publication is not restricted to being navigated in a sequential manner, as is the case with conventional paper-based publications. Claim 1 provides multi-dimensional navigation through a fixed data space defined by the predefined portions of the electronic publication.

The first and second points and information pertaining thereto are presented in first and second display regions to provide the user with the ability to navigate a document along any number of provided axes, whilst maintaining context for the portion of text currently being viewed. Importantly, the second axis is derived from the first point, ensuring that the information displayed in the second display region relating to the second point on the second axis is linked to the predefined portion currently being viewed in the first display region.

Dolan provides a seamlessly extensible two-dimensional hierarchy allowing access to arbitrary data. *Dolan* provides a portion displayed in a first display region (Figure 1, 104). A first point on a first axis is displayed in a second display region 102 to provide a user with context for the displayed portion. The hierarchical structure presented in the second display region 102 relates to a two-dimensional space. The structure provides a user with context for a currently viewed portion by presenting multiple points along a first axis. Thus, a second point may only be selected from a fixed hierarchy relating to a first axis. *Dolan* does not present and display a second point on a second orthogonal axis and information pertaining thereto to provide the user with sufficient context for the displayed portion to enable the user to navigate a multidimensional space of three or more dimensions.

Applicants submit that *Dolan* does not teach navigation of a multidimensional space defined by axes corresponding to logical connections among predefined portions of an electronic document. Further, *Dolan* fails to teach or suggest the provision of first and second display regions and the further display of first and second points, the second point

being derived from the first point, to provide a user with context for a displayed predefined portion of the electronic document. Accordingly, Applicants submit that the features of Claim 1 are neither taught nor suggested by *Dolan* and thus Claim 1 and pending dependent claims 4 to 12 are novel in light of *Dolan*.

Independent claims 12 and 23 have been amended in a similar manner to the amendments described above in relation to claim 1, by incorporating the features of Claims 13 and 14, and Claims 24 and 25, respectively. Applicants submit that Claims 12 and 23 and the claims that depend therefrom are allowable for the reasons presented above in respect of Claim 1.

6. Claims 34-35, 37-38, 43-44, 47, 54-55, 57-58, 63-64, 67, 74-75, 77-78, 83-84, and 87 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,892,513 (Fay).

Independent Claim 34 has been amended. Support for the amendment is found in Claims 35 and 37, the features of which are now recited in the amended form of Claim 34. Claims 35 and 37 have been cancelled. Claim 34 provides a method of publishing an electronic publication through the provision of an hierarchical structure. The electronic publication is formed from predefined portions of text-based data, which are stored in terminal nodes of the hierarchical structure. Thus, the data content of the electronic publication is contained in the terminal nodes.

Higher level nodes are provided to organise the terminal nodes in accordance with the hierarchical structure. Each higher level node contains the identity of a parent node, a position indicator for the node and an identifier. One of the higher level nodes is the apex of the hierarchical structure and contains a null parent node identity. Further, the position indicator in each higher level node indicates a position of a given node relative to a sibling node. The attributes of the higher level node distinguish the claimed invention from the cited art, as it is the resulting structure that enables the data stored in the terminal nodes to be organised in a manner to allow easy navigation through the electronic document.

Fay is directed towards the control of different versions of a document, particularly with respect to locking out portions of data and multi-user editing. *Fay* stresses data check out, locking and universal “shadow” metadata, which is in stark contrast to the claimed invention, which provides a structure to enable user friendly navigation through a complex multidimensional data space.

Fay provides a hierarchical structure in which a document, for example, is divided into different nodes of the hierarchical structure. Each node may contain content. Various parts of the hierarchical structure are then “locked out” to enable a user to edit the content of a node, whilst preventing multiple access from other users. Other users are, however, able to view such a “locked out” node. In contrast, the hierarchical structure of Claim 34 of the present application is directed to navigation (viewing) of a multidimensional space of a structured data space.

Fay presents an hierarchical structure in which each node, or subtree, contains information, such as the content of a chapter or sections within a chapter. Conversely, Claim 34 defines a structure in which only the terminal nodes contain content. The higher level nodes do not contain content themselves, rather the higher level nodes contain information relating to a parent node, a position indicator indicating a position relative to a sibling node, and an identifier. Further, the position indicator in each higher level node indicates a position of the respective higher level node relative to a sibling node in the hierarchical structure of the electronic publication. The information in the higher level nodes is utilised to organise the terminal nodes in accordance with the structure of the electronic publication under consideration.

Thus, Applicants submit that Claim 34 is neither taught nor suggested by the disclosure of *Fay*. Applicants submit that the claims that depend from Claim 34 are novel over *Fay* for at least the reasons stated above in respect of Claim 34.

Further, in respect of the objection to dependent claim 38, *Fay* is concerned with the process of modifying a given dataset. A user “locks out” a portion of a document, edits the portion and then stores the “modified portion” in place of the original portion in the same node of the hierarchical structure. Claim 38 uses the expression “*storing a modified portion*” to relate to the capability of storing multiple versions of nominal data within an overall structure of a published electronic document. Thus, two versions of a

provision of legislation might be stored, for example, in two different terminal nodes as distinct predefined portions. Publishing the electronic document in the manner of the invention allows the two different versions to be stored in the hierarchical structure defined, by using higher level nodes to determine appropriate locations within the structure for those terminal nodes containing the respective versions.

Independent claims 54 and 74 have been amended in a manner similar to that proposed above in respect of Claim 34, by incorporating the features of Claims 55 and 57, and Claims 75 and 77, respectively. Applicants submit that Claims 54 and 74 and the claims that depend therefrom are allowable over *Fay* for the reasons presented above in respect of Claim 34.

9. Claims 9, 20, and 31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,963,208 (Dolan et al.).

Claim 9 depends from independent claim 1, Claim 20 depends from independent Claim 12, and Claim 31 depends from independent Claim 23.

Independent Claim 1 has been amended. Support for the amendment is found in Claims 2 and 3, the features of which are now recited in the amended form of Claim 1. Claims 2 and 3 have been cancelled.

Claim 1 is directed to providing and displaying a first point and a second point on respective first and second axes to enable navigation of a multidimensional space containing an electronic publication formed from predefined portions of text-based data. The Applicants submit that the term "*multidimensional space*" would be readily understood by a person skilled in the art to describe a space defined by a plurality of intersecting axes. Claim 1 has been amended to recite that the multidimensional space has three or more dimensions, as supported at page 10, lines 5-6 of International Publication No. WO 98/34179 (PCT/AU98/00050), which is incorporated into this application by cross-reference.

The multidimensional space of claim 1 is defined by axes corresponding to logical connections among predefined portions of an electronic publication, and any logical connections that may exist between the predefined portions of the electronic publication and predefined portions of any further electronic publication data in the multidimensional

space, as supported by page 1 at lines 11 to 22, and page 8, line 15 to page 9, line 2. Further support is found at page 9, lines 9-26 of International Publication No. WO 98/34179 (PCT/AU98/00050), which is incorporated into this application by cross-reference. Page 12 of the description of this application describes a multidimensional space containing an electronic publication that may be navigated in respect of a number of viewing axes. The axes are orthogonal to one another, as described in the specification at page 12, lines 16-17. The electronic publication is not restricted to being navigated in a sequential manner, as is the case with conventional paper-based publications. Claim 1 provides multi-dimensional navigation through a fixed data space defined by the predefined portions of the electronic publication.

The first and second points and information pertaining thereto are presented in first and second display regions to provide the user with the ability to navigate a document along any number of provided axes, whilst maintaining context for the portion of text currently being viewed. Importantly, the second axis is derived from the first point, ensuring that the information displayed in the second display region relating to the second point on the second axis is linked to the predefined portion currently being viewed in the first display region.

Claim 9 restricts the predefined portion to a provision of legislation.

Dolan provides a seamlessly extensible two-dimensional hierarchy allowing access to arbitrary data. *Dolan* provides a portion displayed in a first display region (Figure 1, 104). A first point on a first axis is displayed in a second display region 102 to provide a user with context for the displayed portion. The hierarchical structure presented in the second display region 102 relates to a two-dimensional space. The structure provides a user with context for a currently viewed portion by presenting multiple points along a first axis. Thus, a second point may only be selected from a fixed hierarchy relating to a first axis. *Dolan* does not present and display a second point on a second orthogonal axis and information pertaining thereto to provide the user with sufficient context for the displayed portion to enable the user to navigate a multidimensional space of three or more dimensions.

Applicants submit that *Dolan* does not teach navigation of a multidimensional space defined by axes corresponding to logical connections among predefined portions of an electronic document. Further, *Dolan* fails to teach or suggest the provision of first and second display regions and the further display of first and second points, the second point being derived from the first point, to provide a user with context for a displayed predefined portion of the electronic document. Accordingly, Applicants submit that the features of Claim 1 are neither taught nor suggested, or even alluded to, by *Dolan* and thus Claim 1 and pending dependent claims 4 to 12, including Claim 9, are novel and non-obvious in light of *Dolan*.

Independent claims 12 and 23 have been amended in a similar manner to the amendments described above in relation to claim 1, by incorporating the features of Claims 13 and 14, and Claims 24 and 25, respectively. Applicants submit that Claims 12 and 23 are non-obvious in light of *Dolan* and for at least that reason, dependent Claims 20 and 31 are also non-obvious in light of *Dolan*.

10. Claims 8, 10-11, 19, 21-22, 30, and 32-33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,963,208 (Dolan et al.) as applied to claim 2, and further in view of U.S. Patent No. 6,144,962 (Weinberg et al.).

Applicants submit that independent Claims 1, 12 and 23 are novel and non-obvious in light of *Dolan* and further in view of *Weinberg*.

Independent Claim 1 has been amended. Support for the amendment is found in Claims 2 and 3, the features of which are now recited in the amended form of Claim 1. Claims 2 and 3 have been cancelled.

Claim 1 is directed to providing and displaying a first point and a second point on respective first and second axes to enable navigation of a multidimensional space containing an electronic publication formed from predefined portions of text-based data. Claim 1 has been amended to recite that the multidimensional space has three or more dimensions, as supported at page 10, lines 5-6 of International Publication No. WO 98/34179 (PCT/AU98/00050), which is incorporated into this application by cross-reference.

The multidimensional space of claim 1 is defined by axes corresponding to logical connections among predefined portions of an electronic publication, and any logical connections that may exist between the predefined portions of the electronic publication and predefined portions of any further electronic publication data in the multidimensional space, as supported by page 1 at lines 11 to 22, and page 8, line 15 to page 9, line 2.

Further support is found at page 9, lines 9-26 of International Publication No. WO 98/34179 (PCT/AU98/00050), which is incorporated into this application by cross-reference. Page 12 of the description of this application describes a multidimensional space containing an electronic publication that may be navigated in respect of a number of viewing axes. The axes are orthogonal to one another, as described in the specification at page 12, lines 16-17. The electronic publication is not restricted to being navigated in a sequential manner, as is the case with conventional paper-based publications. Claim 1 provides multi-dimensional navigation through a fixed data space defined by the predefined portions of the electronic publication.

The first and second points and information pertaining thereto are presented in first and second display regions to provide the user with the ability to navigate a document along any number of provided axes, whilst maintaining context for the portion of text currently being viewed. Importantly, the second axis is derived from the first point, ensuring that the information displayed in the second display region relating to the second point on the second axis is linked to the predefined portion currently being viewed in the first display region.

Claim 8 restricts the second axis to time-based versions of the selected one of the predefined portions. Thus, the second axis is a temporal axis in the multidimensional space along which a user can navigate various versions of the selected predefined portion, as those versions existed through time.

Claim 10 restricts the second axis to representing search criteria and results corresponding to the selected predefined portion displayed in the first display region. Thus, a user is provided with search results criteria and results to provide further context for the displayed predefined portion.

Dolan provides a seamlessly extensible two-dimensional hierarchy allowing access to arbitrary data. *Dolan* provides a portion displayed in a first display region (Figure 1, 104). A first point on a first axis is displayed in a second display region 102 to provide a user with context for the displayed portion. The hierarchical structure presented in the second display region 102 relates to a two-dimensional space. The structure provides a user with context for a currently viewed portion by presenting multiple points along a first axis. Thus, a second point may only be selected from a fixed hierarchy relating to a first axis. *Dolan* does not present and display a second point on a second orthogonal axis and information pertaining thereto to provide the user with sufficient context for the displayed portion to enable the user to navigate a multidimensional space of three or more dimensions.

Applicants submit that *Dolan* does not teach navigation of a multidimensional space defined by axes corresponding to logical connections among predefined portions of an electronic document. Further, *Dolan* fails to teach or suggest the provision of first and second display regions and the further display of first and second points, the second point being derived from the first point, to provide a user with context for a displayed predefined portion of the electronic document.

Weinberg provides a graphical view of dynamically changing web site links. This is in contrast to the claimed invention, which provides a non-graphical view of a fixed pre-prepared multidimensional dataset. There does not appear to be any disclosure or suggestion in *Weinberg* of the presentation of time-based data as in the present application.

Further, *Dolan* and *Weinberg*, whether considered alone or in combination, fail to teach or suggest the provision of time-based versions of portions, as provided by Claim 8, or search criteria and results, as provided by Claim 10, to provide a user with further context for a displayed predefined portion. Defining the type of the second axis provides further context for both the second point that is displayed, and the information relating to the second point that is displayed in the second display region.

Independent claims 12 and 23 have been amended in a similar manner to the amendments described above in relation to claim 1, by incorporating the features of Claims 13 and 14, and Claims 24 and 25, respectively.

Applicants submit that for the above reasons, the features of Claim 1 are neither taught nor suggested, or even alluded to, by *Dolan* and *Weinberg*, and thus independent Claims 1, 12 and 23 are considered novel and non-obvious in light of *Dolan* and *Weinberg*. Thus, dependent Claims 8, 10, 11, 19, 21, 22, 32, 33 are considered non-obvious by virtue of dependence on respective independent Claims 1, 12 and 23.

11. Claims 36, 45, 50-53, 56, 65, 70-73, 76, 85, and 90-97 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,892,513 (Fay) as applied to claim 34, and further in view of U.S. Patent No. 6,185,576 (McIntosh).

Independent Claim 34 has been amended. Support for the amendment is found in Claims 35 and 37, the features of which are now recited in the amended form of Claim 34. Claims 35 and 37 have been cancelled. Claim 34 provides a method of publishing an electronic publication through the provision of an hierarchical structure. The electronic publication is formed from predefined portions of text-based data, which are stored in terminal nodes of the hierarchical structure. Thus, the data content of the electronic publication is contained in the terminal nodes.

Higher level nodes are provided to organise the terminal nodes in accordance with the hierarchical structure. Each higher level node contains the identity of a parent node, a position indicator for the node and an identifier. One of the higher level nodes is the apex of the hierarchical structure and contains a null parent node identity. Further, the position indicator in each higher level node indicates a position of a given node relative to a sibling node. The attributes of the higher level node distinguish the claimed invention from the cited art, as it is the resulting structure that enables the data stored in the terminal nodes to be organised in a manner to allow easy navigation through the electronic document.

Fay is directed towards the control of different versions of a document, particularly with respect to locking out portions of data and multi-user editing. *Fay* stresses data check out, locking and universal "shadow" metadata, which is in stark contrast to the claimed invention, which provides a structure to enable user friendly navigation through a complex multidimensional data space.

Fay provides a hierarchical structure in which a document, for example, is divided into different nodes of the hierarchical structure. Each node may contain content. Various parts of the hierarchical structure are then "locked out" to enable a user to edit the content of a node, whilst preventing multiple access from other users. Other users are, however, able to view such a "locked out" node. In contrast, the hierarchical structure of Claim 34 of the present application is directed to navigation (viewing) of a multidimensional space of a structured data space.

Fay presents an hierarchical structure in which each node, or subtree, contains information, such as the content of a chapter or sections within a chapter. Conversely, Claim 34 defines a structure in which only the terminal nodes contain content. The higher level nodes do not contain content themselves, rather the higher level nodes contain information relating to a parent node, a position indicator indicating a position relative to a sibling node, and an identifier. Further, the position indicator in each higher level node indicates a position of the respective higher level node relative to a sibling node in the hierarchical structure of the electronic publication. The information in the higher level nodes is utilised to organise the terminal nodes in accordance with the structure of the electronic publication under consideration.

Thus, Applicants submit that Claim 34 is neither taught nor suggested by the disclosure of *Fay*. Applicants submit that as Claims depend from Claim 34, Applicants submit that these claims are novel over *Fay* for at least the reasons stated above in respect of Claim 34.

Independent claims 54 and 74 have been amended in a manner similar to that proposed above in respect of Claim 34, by incorporating the features of Claims 55 and 57, and Claims 75 and 77, respectively. Applicants submit that Claims 54 and 74 and the claims that depend therefrom are allowable over *Fay* for the reasons presented above in respect of Claim 34.

McIntosh discloses time-stamping and the disclosure thereof, alone or in combination, is insufficient to anticipate or suggest the temporal navigation facilities of the claimed invention. The time-stamping provided by *McIntosh* does not allow for the location of a provision within a given piece of legislation to change from a first version of the provision to a later version of the provision. However, such capability is provided in

the claimed invention and allows, for example, Chapter 2B, Section 81(i) of a piece of legislation to become, by amendment, Chapter 3, Section 227 whilst retaining its essential identity. Further, the claimed invention provides non-terminal nodes that cannot have an associated scope of their own.

Independent Claim 34 provides a hierarchical structure in which predefined portions are stored in terminal nodes. Different versions of a predefined portion are stored in different terminal nodes, with the higher level nodes and their respective associated attributes organising the terminal nodes into a navigable structure. The combination of *Fay* and *McIntosh* fails to teach or suggest the claimed arrangement of storing predefined portions in terminal nodes and the related organisational structure associated therewith. Thus, Applicants submit that independent Claims 34, 54 and 74 and the claims that depend therefrom are non-obvious in light of *Fay* and *Weinberg*.

12. Claims 39-40, 59-60, and 79-80 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,892,513 (Fay) as applied to claim 34, and further in view of U.S. Patent Application Publication No. 2002/0133484 (Chau et al.).

Independent Claim 34 has been amended. Support for the amendment is found in Claims 35 and 37, the features of which are now recited in the amended form of Claim 34. Claims 35 and 37 have been cancelled. Claim 34 provides a method of publishing an electronic publication through the provision of an hierarchical structure. The electronic publication is formed from predefined portions of text-based data, which are stored in terminal nodes of the hierarchical structure. Thus, the data content of the electronic publication is contained in the terminal nodes.

Higher level nodes are provided to organise the terminal nodes in accordance with the hierarchical structure. Each higher level node contains the identity of a parent node, a position indicator for the node and an identifier. One of the higher level nodes is the apex of the hierarchical structure and contains a null parent node identity. Further, the position indicator in each higher level node indicates a position of a given node relative to a sibling node. The attributes of the higher level node distinguish the claimed invention

from the cited art, as it is the resulting structure that enables the data stored in the terminal nodes to be organised in a manner to allow easy navigation through the electronic document.

Fay is directed towards the control of different versions of a document, particularly with respect to locking out portions of data and multi-user editing. *Fay* stresses data check out, locking and universal "shadow" metadata, which is in stark contrast to the claimed invention, which provides a structure to enable user friendly navigation through a complex multidimensional data space.

Fay provides a hierarchical structure in which a document, for example, is divided into different nodes of the hierarchical structure. Each node may contain content. Various parts of the hierarchical structure are then "locked out" to enable a user to edit the content of a node, whilst preventing multiple access from other users. Other users are, however, able to view such a "locked out" node. In contrast, the hierarchical structure of Claim 34 of the present application is directed to navigation (viewing) of a multidimensional space of a structured data space.

Fay presents an hierarchical structure in which each node, or subtree, contains information, such as the content of a chapter or sections within a chapter. Conversely, Claim 34 defines a structure in which only the terminal nodes contain content. The higher level nodes do not contain content themselves, rather the higher level nodes contain information relating to a parent node, a position indicator indicating a position relative to a sibling node, and an identifier. Further, the position indicator in each higher level node indicates a position of the respective higher level node relative to a sibling node in the hierarchical structure of the electronic publication. The information in the higher level nodes is utilised to organise the terminal nodes in accordance with the structure of the electronic publication under consideration.

Thus, Applicants submit that Claim 34 is neither taught nor suggested by the disclosure of *Fay*. Applicants submit that the claims that depend from Claim 34 are novel over *Fay* for at least the reasons stated above in respect of Claim 34.

Independent claims 54 and 74 have been amended in a manner similar to that proposed above in respect of Claim 34, by incorporating the features of Claims 55 and 57, and Claims 75 and 77, respectively. Applicants submit that Claims 54 and 74 and the

claims that depend therefrom are allowable over *Fay* for the reasons presented above in respect of Claim 34.

Chau describes a technique for storing XML data in a relational database and retrieving such stored data. The claimed invention is equally applicable to documents stored in relational databases or other flat files using methods distinct from those provided in *Chau*. The parent node of the hierarchical MALT structure cannot contain substantive data of its own. This is a distinguishing feature of the claimed invention that is neither taught nor suggested by either *Fay* or *Chau*. Further, as described above, only terminal nodes can contain predefined portions of text-based data, and it is the higher level nodes and their respective attributes that organise the terminal nodes that facilitate navigation of the electronic document. Providing an apex node, higher level nodes containing attributes to define a hierarchical structure, but no content, and terminal nodes containing content, as provided in each of independent claims 34, 54 and 74, is neither, taught, suggested or even alluded to by *Fay* or *Chau*, either together or in combination. Thus, Applicants submit that each of Claims 34, 54 and 74, and each of the claims that depends therefrom, is non-obvious in light of the combination of *Fay* and *Chau*.

13. Claims 41-42, 48-49, 61-62, 68-69, 81-82, and 88-89 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,892,513 (Fay) as applied to claim 34, and further in view of U.S. Patent Application Publication No. 2002/0133484 (Chau et al.) as applied to claims 40 and 43, and further in view of U.S. Patent No. 5,963,208 (Dolan et al.).

Independent Claim 34 has been amended. Support for the amendment is found in Claims 35 and 37, the features of which are now recited in the amended form of Claim 34. Claims 35 and 37 have been cancelled. Claim 34 provides a method of publishing an electronic publication through the provision of an hierarchical structure. The electronic publication is formed from predefined portions of text-based data, which are stored in terminal nodes of the hierarchical structure. Thus, the data content of the electronic publication is contained in the terminal nodes.

Higher level nodes are provided to organise the terminal nodes in accordance with the hierarchical structure. Each higher level node contains the identity of a parent node, a position indicator for the node and an identifier. One of the higher level nodes is the apex of the hierarchical structure and contains a null parent node identity. Further, the position indicator in each higher level node indicates a position of a given node relative to a sibling node. The attributes of the higher level node distinguish the claimed invention from the cited art, as it is the resulting structure that enables the data stored in the terminal nodes to be organised in a manner to allow easy navigation through the electronic document.

Fay is directed towards the control of different versions of a document, particularly with respect to locking out portions of data and multi-user editing. *Fay* stresses data check out, locking and universal "shadow" metadata, which is in stark contrast to the claimed invention, which provides a structure to enable user friendly navigation through a complex multidimensional data space.

Fay provides a hierarchical structure in which a document, for example, is divided into different nodes of the hierarchical structure. Each node may contain content. Various parts of the hierarchical structure are then "locked out" to enable a user to edit the content of a node, whilst preventing multiple access from other users. Other users are, however, able to view such a "locked out" node. In contrast, the hierarchical structure of Claim 34 of the present application is directed to navigation (viewing) of a multidimensional space of a structured data space.

Fay presents an hierarchical structure in which each node, or subtree, contains information, such as the content of a chapter or sections within a chapter. Conversely, Claim 34 defines a structure in which only the terminal nodes contain content. The higher level nodes do not contain content themselves, rather the higher level nodes contain information relating to a parent node, a position indicator indicating a position relative to a sibling node, and an identifier. Further, the position indicator in each higher level node indicates a position of the respective higher level node relative to a sibling node in the hierarchical structure of the electronic publication. The information in the higher level nodes is utilised to organise the terminal nodes in accordance with the structure of the electronic publication under consideration.

Thus, Applicants submit that Claim 34 is neither taught nor suggested by the disclosure of *Fay*. Applicants submits that the claims that depend from Claim 34 are novel over *Fay* for at least the reasons stated above in respect of Claim 34.

Independent claims 54 and 74 have been amended in a manner similar to that proposed above in respect of Claim 34, by incorporating the features of Claims 55 and 57, and Claims 75 and 77, respectively. Applicants submit that Claims 54 and 74 and the claims that depend therefrom are allowable over *Fay* for the reasons presented above in respect of Claim 34.

Chau describes a technique for storing XML data in a relational database and retrieving such stored data. The claimed invention is equally applicable to documents stored in relational databases or other flat files using methods distinct from those provided in *Chau*. The parent node of the hierarchical MALT structure cannot contain substantive data of its own. This is a distinguishing feature of the claimed invention that is neither taught nor suggested by either *Fay* or *Chau*. Further, as described above, only terminal nodes can contain predefined portions of text-based data, and it is the higher level nodes and their respective attributes that organise the terminal nodes that facilitate navigation of the electronic document. Providing an apex node, higher level nodes containing attributes to define a hierarchical structure, but no content, and terminal nodes containing content, as provided in each of independent claims 34, 54 and 74, is neither, taught, suggested or even alluded to by *Fay* or *Chau*, either together or in combination. Thus, Applicants submit that each of Claims 34, 54 and 74, and each of the claims that depends therefrom, is non-obvious in light of the combination of *Fay* and *Chau*.

Examiner contends that *Dolan* discloses a terminal node including a label of a publication associated with a higher node (Fig. 7 of *Dolan*). Claim 34 provides that the predefined portions of text-based data of an electronic publication are stored in the terminal nodes. Thus, the label of the publication referred to in Claims 41, 42, 48, 49, 61, 62, 68, 69, 81, 82, 88, 89, each of which depends from Claim 34, does not refer to a label of a publication from a higher node, as the higher nodes do not contain any content, said higher level nodes existing to organise the content-carrying terminal nodes. Applicants submit that the structure claimed in Claim 34 is neither taught nor suggested by *Fay*,

Chau or *Dolan*, alone or in combination, and thus Claim 34, and the claims that depend therefrom, are non-obvious in light of these citations.

14. Claims 46, 66, and 86 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,892,513 (Fay) as applied to claim 34, and further in view of U.S. Patent No. 6,185,576 (McIntosh) as applied to claim 36, and further in view of U.S. Patent No. 6,144,962 (Weinberg).

Independent Claim 34 has been amended. Support for the amendment is found in Claims 35 and 37, the features of which are now recited in the amended form of Claim 34. Claims 35 and 37 have been cancelled. Claim 34 provides a method of publishing an electronic publication through the provision of an hierarchical structure. The electronic publication is formed from predefined portions of text-based data, which are stored in terminal nodes of the hierarchical structure. Thus, the data content of the electronic publication is contained in the terminal nodes.

Higher level nodes are provided to organise the terminal nodes in accordance with the hierarchical structure. Each higher level node contains the identity of a parent node, a position indicator for the node and an identifier. One of the higher level nodes is the apex of the hierarchical structure and contains a null parent node identity. Further, the position indicator in each higher level node indicates a position of a given node relative to a sibling node. The attributes of the higher level node distinguish the claimed invention from the cited art, as it is the resulting structure that enables the data stored in the terminal nodes to be organised in a manner to allow easy navigation through the electronic document.

Fay is directed towards the control of different versions of a document, particularly with respect to locking out portions of data and multi-user editing. *Fay* stresses data check out, locking and universal "shadow" metadata, which is in stark contrast to the claimed invention, which provides a structure to enable user friendly navigation through a complex multidimensional data space.

Fay provides a hierarchical structure in which a document, for example, is divided into different nodes of the hierarchical structure. Each node may contain content.

Various parts of the hierarchical structure are then “locked out” to enable a user to edit the content of a node, whilst preventing multiple access from other users. Other users are, however, able to view such a “locked out” node. In contrast, the hierarchical structure of Claim 34 of the present application is directed to navigation (viewing) of a multidimensional space of a structured data space.

Fay presents an hierarchical structure in which each node, or subtree, contains information, such as the content of a chapter or sections within a chapter. Conversely, Claim 34 defines a structure in which only the terminal nodes contain content. The higher level nodes do not contain content themselves, rather the higher level nodes contain information relating to a parent node, a position indicator indicating a position relative to a sibling node, and an identifier. Further, the position indicator in each higher level node indicates a position of the respective higher level node relative to a sibling node in the hierarchical structure of the electronic publication. The information in the higher level nodes is utilised to organise the terminal nodes in accordance with the structure of the electronic publication under consideration.

Thus, Applicants submit that Claim 34 is neither taught nor suggested by the disclosure of *Fay*. Applicants submit that the claims that depend from Claim 34 are novel over *Fay* for at least the reasons stated above in respect of Claim 34.

Independent claims 54 and 74 have been amended in a manner similar to that proposed above in respect of Claim 34, by incorporating the features of Claims 55 and 57, and Claims 75 and 77, respectively. Applicants submit that Claims 54 and 74 and the claims that depend therefrom are allowable over *Fay* for the reasons presented above in respect of Claim 34.

McIntosh discloses time-stamping and the disclosure thereof, alone or in combination, is insufficient to anticipate or suggest the temporal navigation facilities of the claimed invention. The time-stamping provided by *McIntosh* does not allow for the location of a provision within a given piece of legislation to change from a first version of the provision to a later version of the provision. However, such capability is provided in the claimed invention and allows, for example, Chapter 2B, Section 81(i) of a piece of legislation to become, by amendment, Chapter 3, Section 227 whilst retaining its

essential identity. Further, the claimed invention provides non-terminal nodes that cannot have an associated scope of their own.

Weinberg provides a graphical view of dynamically changing web site links. This is in contrast to the claimed invention, which provides a non-graphical view of a fixed pre-prepared multidimensional dataset.

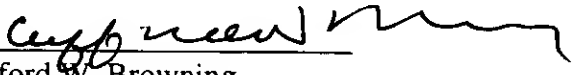
Applicants submit that *Fay, McIntosh* and *Weinberg*, alone or in combination, fail to teach or suggest the hierarchical structure defined by independent claims 34, 54 and 94. Accordingly, Applicants submit that independent claims 34, 54 and 94, and the claims that depend therefrom, are non-obvious in light of the cited documents.

Independent claims 1, 11, 12, 22, 23, 33, 34, 54, 74, and 94 are believed to be allowable over the applied references. Reconsideration and withdrawal of the 35 U.S.C. § 102 (b) and 35 U.S.C. § 103 (a) rejection of claims 1, 11, 12, 22, 23, 33, 34, 54, 74, and 94 are respectfully requested.

The other rejected claims in the application are each dependent from the independent claims discussed above and are therefore believed to be allowable for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the present invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing amendment and remarks, the entire application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

Respectfully submitted,

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interest. Bookmarks are typically limited in the information provided to users. Bookmarks follow a single axis, perhaps indicating the current page, chapter and title of the publication. However, bookmarks do not necessarily provide the user with adequate context-pertaining to how the user arrived at the current page. If a user knows the exact publication desired and then navigates through the same publication, a bookmark is probably adequate for the user's needs. In the event that the user has conducted a number of searches and trawled through various versions of different documents to arrive at the current page of a publication, it is impossible for a bookmark to capture all the relevant information and provide the user with an adequate reading context. The book metaphor fails to address the abilities and complexities of electronic publications.

Existing methods of navigating compact disc based publications and Internet sites are typically ill-suited to displaying the complex data provided by MALT. Known web solutions, for example, typically handle two axes, sequential and hierarchical, using either embedded links such as Previous, Next and Contents, or expandable content frames, as provided in Windows Explorer. Further axes may be handled by incorporating embedded links in the body of the text. Such embedded links are point to point, and provide limited navigational value to the user.

Object databases are capable of providing the required functionality, but search queries employed by these databases are too complicated for untrained users, both in terms of the complexity and amount of information required.

Thus, a need clearly exists for a detailed context to be provided to users of electronic publishing, overcoming one or more disadvantages of existing systems.

Summary

According to a first aspect of the invention, there is provided a method of navigating in a multidimensional space having three or more dimensions ~~containing an~~

~~electronic publication formed from predefined portions of text-based data encoded using an markup language.~~ The method includes the steps of:

displaying in a first display region a selected ~~one of the predefined portion of an~~
~~electronic publication formed from predefined portions of text-based data encoded using a~~
5 markup language, each predefined portion having at least one attribute being a coordinate
of an axis of the multidimensional space, wherein logical connections among the
predefined portions, and any logical connections between the predefined portions and
predefined portions of any further electronic publication data in the multidimensional
space, correspond to one or more axes of the multidimensional space ~~portions in a first~~
10 display region; and

displaying a point on a primary axis of the multidimensional space dependent
upon an attribute of the ~~for the~~ displayed predefined portion;

displaying a second point on a second, viewing axis orthogonal to the first axis,
the second point being derived from the first point dependent upon a logical connection
15 between the displayed predefined portion and a predefined portion associated with the
second point; and

displaying information regarding the second point of the second axis in a second
display region, the first and second points being displayed in two display regions.

According to a second aspect of the invention, there is provided a method of
20 navigating in a multidimensional space having three or more dimensions, the
multidimensional space containing an electronic publication formed from predefined
portions of text-based data encoded using a markup language. The method includes the
steps of:

providing a view comprising at least two anchor sets;

displaying at least one base point and at least a first axis depending from the base point;

displaying at least one of a further point and an axis derived from the base point;

navigating a multidimensional space formed by the points and axes;

5 returning to the base point when required; and

adjusting the view so a current view point becomes a new base point.

According to a third aspect of the invention, there is provided an apparatus for navigating in a multidimensional space having three or more dimensions ~~containing an electronic publication formed from predefined portions of text-based data encoded using a~~

10 ~~markup language~~. The apparatus includes:

a device for displaying in a first display region a selected ~~one of the~~ predefined portion of an electronic publication formed from predefined portions of text-based data encoded using a markup language, each predefined portion having at least one attribute being a coordinate of an axis of the multidimensional space, wherein logical connections

15 among the predefined portions, and any logical connections between the predefined portions and predefined portions of any further electronic publication data in the multidimensional space, correspond to one or more axes of the multidimensional space portions in a first display region; and

a device for displaying a point on a selected axis of the multidimensional space
20 dependent upon an attribute of the ~~for the~~ displayed predefined portion;

a device for displaying a second point on a second, viewing axis orthogonal to the selected axis, the second point being derived from the first axis at the first point dependent upon a logical connection between the displayed predefined portion and a predefined portion associated with the second point; and

a device for displaying information regarding the second point of the second axis in a second display region, the first and second points being displayed in two display regions.

According to a fourth aspect of the invention, there is provided an apparatus for navigating in a multidimensional space having three or more dimensions, the multidimensional space containing an electronic publication formed from predefined portions of text-based data encoded using a markup language. The apparatus includes:

a device for providing a view comprising at least two anchor sets;

a device for displaying at least one base point and at least a first axis depending from the base point;

a device for displaying at least one of a further point and an axis derived from the base point;

a device for navigating a multidimensional space formed by the points and axes;

a device for returning to the base point when required; and

a device for adjusting the view so a current view point becomes a new base point.

According to a fifth aspect of the invention, there is provided a computer program product having a computer readable medium having a computer program recorded therein for navigating in a multidimensional space having three or more

dimensions containing an electronic publication formed from predefined portions of text-based data encoded using a markup language. The computer program product includes:

a computer program code module for displaying in a first display region a selected one of the predefined portion of an electronic publication formed from

predefined portions of text-based data encoded using a markup language, each predefined portion having at least one attribute being a coordinate of an axis of the multidimensional

space, wherein logical connections among the predefined portions, and any logical connections between the predefined portions and predefined portions of any further electronic publication data in the multidimensional space, correspond to one or more axes of the multidimensional space portions in a first display region; and

5 a computer program code module for displaying a point on a primary axis of the multidimensional space dependent upon an attribute of the ~~for the~~ displayed predefined portion;

a computer program code module for displaying a second point on a second, viewing axis orthogonal to the first axis, the second point being derived from the first
10 point dependent upon a logical connection between the displayed predefined portion and a predefined portion associated with the second point; and

a computer program code module for displaying information regarding the second point of the second axis in a second display region, the first and second points being displayed in two display regions.

15 According to a sixth aspect of the invention, there is provided a computer program product having a computer readable medium having a computer program recorded therein for navigating in a multidimensional space having three or more dimensions, the multidimensional space containing an electronic publication formed from predefined portions of text-based data encoded using a markup language. The computer
20 program product includes:

 a computer program code module for providing a view comprising at least two anchor sets;

 a computer program code module for displaying at least one base point and at least a first axis depending from the base point;

a computer program code module for displaying other points, axes or both derived from the base point;

a computer program code module for navigating a multidimensional space formed by the points and axes;

- 5 a computer program code module for returning to the base point when required; and
a computer program code module for adjusting the view so a current view point becomes a new base point.

According to a seventh aspect of the invention, there is provided a method of publishing an electronic publication formed from predefined portions of text-based data
10 encoded using a markup language. The method includes the steps of:

storing predefined portions in terminal nodes; and

providing one or more higher level nodes for organising ~~said~~ the terminal nodes to correspond with a hierarchical structure embodied in ~~said~~ the electronic publication, wherein each higher level node consists of the identity of a parent node, a position indicator for ~~said~~
15 the higher level node, and an identifier;

wherein one of the higher level nodes has a null parent identity, and the position indicator indicates a position of the higher level node relative to a sibling node.

According to an eighth aspect of the invention, there is provided an apparatus for publishing an electronic publication formed from predefined portions of text-based data
20 encoded using a markup language. The apparatus includes:

a device for storing predefined portions in terminal nodes; and

a device for providing one or more higher level nodes for organising [said] the terminal nodes to correspond with a hierarchical structure embodied in [said] the electronic

publication, wherein each higher level node consists of the identity of a parent node, a position indicator for ~~said the~~ higher level node, and an identifier;

wherein one of the higher level nodes has a null parent identity, and the position indicator indicates a position of the higher level node relative to a sibling node.

5 According to a ninth aspect of the invention, there is provided a computer program product having a computer readable medium having a computer program recorded therein for publishing an electronic publication formed from predefined portions of text-based data encoded using a markup language. The computer program product includes:

 a computer program code module for storing predefined portions in terminal nodes;

10 and

 a computer program code module for providing one or more higher level nodes for organising ~~said the~~ terminal nodes to correspond with a hierarchical structure embodied in ~~said the~~ electronic publication, wherein each higher level node consists of the identity of a parent node, a position indicator for the higher level node, and an identifier;

15 wherein one of the higher level nodes has a null parent identity, and the position indicator indicates a position of the higher level node relative to a sibling node.

According to a tenth aspect of the invention, there is provided a method of publishing an electronic publication formed from predefined portions of text-based data encoded using a markup language. The method includes the steps of:

20 storing predefined portions in terminal nodes; and

providing one or more higher level nodes for organising the terminal nodes to correspond with a hierarchical structure embodied in the electronic publication, wherein each higher level node consists of the identity of a parent node, a position indicator for the higher level node, and an identifier, the predefined portion includes text associated with a

commentary, and a scope including a start date, an end date and an update date, the update date being later than the start date and earlier than the end date;

further wherein one of the higher level nodes has a null parent identity, and the position indicator indicates a position of the higher level node relative to a sibling node;

5 Other aspects of the invention are also disclosed.

Brief Description of the Drawings

One or more embodiments of the present invention are described hereinafter with reference to the drawings, in which:

Fig. 1 is a screen shot of a Normal axis view of a MALT publication (with a search
10 mode enabled) in accordance with an embodiment of the present invention;

Fig. 2 is a screen shot of a Versions axis view of a MALT publication in accordance with an embodiment of the present invention;

interest. Bookmarks are typically limited in the information provided to users.

Bookmarks follow a single axis, perhaps indicating the current page, chapter and title of the publication. However, bookmarks do not necessarily provide the user with adequate

context pertaining to how the user arrived at the current page. If a user knows the exact

5 publication desired and then navigates through the same publication, a bookmark is probably adequate for the user's needs. In the event that the user has conducted a number of searches and trawled through various versions of different documents to arrive at the current page of a publication, it is impossible for a bookmark to capture all the relevant information and provide the user with an adequate reading context. The book metaphor
10 fails to address the abilities and complexities of electronic publications.

Existing methods of navigating compact disc based publications and Internet sites are typically ill-suited to displaying the complex data provided by MALT. Known web solutions, for example, typically handle two axes, sequential and hierarchical, using either embedded links such as Previous, Next and Contents, or expandable content
15 frames, as provided in Windows Explorer. Further axes may be handled by incorporating embedded links in the body of the text. Such embedded links are point to point, and provide limited navigational value to the user.

Object databases are capable of providing the required functionality, but search queries employed by these databases are too complicated for untrained users, both in
20 terms of the complexity and amount of information required.

Thus, a need clearly exists for a detailed context to be provided to users of electronic publishing, overcoming one or more disadvantages of existing systems.

Summary

According to a first aspect of the invention, there is provided a method of
25 navigating in a multidimensional space having three or more dimensions. The method

includes the steps of:

displaying in a first display region a selected predefined portion of an electronic publication formed from predefined portions of text-based data encoded using a markup language, each predefined portion having at least one attribute being a coordinate of an

5 axis of the multidimensional space, wherein logical connections among the predefined portions, and any logical connections between the predefined portions and predefined portions of any further electronic publication data in the multidimensional space, correspond to one or more axes of the multidimensional space;

10 displaying a point on a primary axis of the multidimensional space dependent upon an attribute of the displayed predefined portion;

displaying a second point on a second, viewing axis orthogonal to the first axis, the second point being derived from the first point dependent upon a logical connection between the displayed predefined portion and a predefined portion associated with the second point; and

15 displaying information regarding the second point of the second axis in a second display region, the first and second points being displayed in two display regions.

According to a second aspect of the invention, there is provided a method of navigating in a multidimensional space having three or more dimensions, the multidimensional space containing an electronic publication formed from predefined portions of text-based data encoded using a markup language. The method includes the steps of:

providing a view comprising at least two anchor sets;

displaying at least one base point and at least a first axis depending from the base point;

25 displaying at least one of a further point and an axis derived from the base point;

navigating a multidimensional space formed by the points and axes;
returning to the base point when required; and
adjusting the view so a current view point becomes a new base point.

According to a third aspect of the invention, there is provided an apparatus for

5 navigating in a multidimensional space having three or more dimensions. The apparatus includes:

a device for displaying in a first display region a selected predefined portion of an electronic publication formed from predefined portions of text-based data encoded using a markup language, each predefined portion having at least one attribute being a
10 coordinate of an axis of the multidimensional space, wherein logical connections among the predefined portions, and any logical connections between the predefined portions and predefined portions of any further electronic publication data in the multidimensional space, correspond to one or more axes of the multidimensional space;

a device for displaying a point on a selected axis of the multidimensional space
15 dependent upon an attribute of the displayed predefined portion;

a device for displaying a second point on a second, viewing axis orthogonal to the selected axis, the second point being derived from the first axis at the first point dependent upon a logical connection between the displayed predefined portion and a predefined portion associated with the second point; and

20 a device for displaying information regarding the second point of the second axis in a second display region, the first and second points being displayed in two display regions.

According to a fourth aspect of the invention, there is provided an apparatus for navigating in a multidimensional space having three or more dimensions, the

multidimensional space containing an electronic publication formed from predefined portions of text-based data encoded using a markup language. The apparatus includes:

a device for providing a view comprising at least two anchor sets;

5 a device for displaying at least one base point and at least a first axis depending from the base point;

a device for displaying at least one of a further point and an axis derived from the base point;

a device for navigating a multidimensional space formed by the points and axes;

a device for returning to the base point when required; and

10 a device for adjusting the view so a current view point becomes a new base point.

According to a fifth aspect of the invention, there is provided a computer program product having a computer readable medium having a computer program recorded therein for navigating in a multidimensional space having three or more
15 dimensions. The computer program product includes:

a computer program code module for displaying in a first display region a selected predefined portion of an electronic publication formed from predefined portions of text-based data encoded using a markup language, each predefined portion having at least one attribute being a coordinate of an axis of the multidimensional space, wherein
20 logical connections among the predefined portions, and any logical connections between the predefined portions and predefined portions of any further electronic publication data in the multidimensional space, correspond to one or more axes of the multidimensional space;

a computer program code module for displaying a point on a primary axis of the
25 multidimensional space dependent upon an attribute of the displayed predefined portion;

a computer program code module for displaying a second point on a second, viewing axis orthogonal to the first axis, the second point being derived from the first point dependent upon a logical connection between the displayed predefined portion and a predefined portion associated with the second point; and

5 a computer program code module for displaying information regarding the second point of the second axis in a second display region, the first and second points being displayed in two display regions.

According to a sixth aspect of the invention, there is provided a computer program product having a computer readable medium having a computer program
10 recorded therein for navigating in a multidimensional space having three or more dimensions, the multidimensional space containing an electronic publication formed from predefined portions of text-based data encoded using a markup language. The computer program product includes:

a computer program code module for providing a view comprising at least two
15 anchor sets;

a computer program code module for displaying at least one base point and at least a first axis depending from the base point;

a computer program code module for displaying other points, axes or both derived from the base point;

20 a computer program code module for navigating a multidimensional space formed by the points and axes;

a computer program code module for returning to the base point when required;
and

a computer program code module for adjusting the view so a current view point
25 becomes a new base point.

According to a seventh aspect of the invention, there is provided a method of publishing an electronic publication formed from predefined portions of text-based data encoded using a markup language. The method includes the steps of:

5 storing predefined portions in terminal nodes; and

providing one or more higher level nodes for organising the terminal nodes to correspond with a hierarchical structure embodied in the electronic publication, wherein each higher level node consists of the identity of a parent node, a position indicator for the higher level node, and an identifier;

10 wherein one of the higher level nodes has a null parent identity, and the position indicator indicates a position of the higher level node relative to a sibling node.

According to an eighth aspect of the invention, there is provided an apparatus for publishing an electronic publication formed from predefined portions of text-based data encoded using a markup language. The apparatus includes:

15 a device for storing predefined portions in terminal nodes; and

a device for providing one or more higher level nodes for organising the terminal nodes to correspond with a hierarchical structure embodied in the electronic publication, wherein each higher level node consists of the identity of a parent node, a position indicator for the higher level node, and an identifier;

20 wherein one of the higher level nodes has a null parent identity, and the position indicator indicates a position of the higher level node relative to a sibling node.

According to a ninth aspect of the invention, there is provided a computer program product having a computer readable medium having a computer program recorded therein for publishing an electronic publication formed from predefined portions

of text-based data encoded using a markup language. The computer program product includes:

a computer program code module for storing predefined portions in terminal nodes; and

5 a computer program code module for providing one or more higher level nodes for organising the terminal nodes to correspond with a hierarchical structure embodied in the electronic publication, wherein each higher level node consists of the identity of a parent node, a position indicator for the higher level node, and an identifier;

10 wherein one of the higher level nodes has a null parent identity, and the position indicator indicates a position of the higher level node relative to a sibling node.

According to a tenth aspect of the invention, there is provided a method of publishing an electronic publication formed from predefined portions of text-based data encoded using a markup language. The method includes the steps of:

storing predefined portions in terminal nodes; and

15 providing one or more higher level nodes for organising the terminal nodes to correspond with a hierarchical structure embodied in the electronic publication, wherein each higher level node consists of the identity of a parent node, a position indicator for the higher level node, and an identifier, the predefined portion includes text associated with a commentary, and a scope including a start date, an end date and an update date, the
20 update date being later than the start date and earlier than the end date;

further wherein one of the higher level nodes has a null parent identity, and the position indicator indicates a position of the higher level node relative to a sibling node.

Other aspects of the invention are also disclosed.

Brief Description of the Drawings

One or more embodiments of the present invention are described hereinafter with reference to the drawings, in which:

Fig. 1 is a screen shot of a Normal axis view of a MALT publication (with a search mode enabled) in accordance with an embodiment of the present invention;

5 Fig. 2 is a screen shot of a Versions axis view of a MALT publication in accordance with an embodiment of the present invention;